2022 ARWU Subject Rankings

SUMMARY

- In 2022, McMaster was ranked in 35 of ARWU's 54 subject areas.

- McMaster had 6 subjects in the top 100 with one subject (Clinical Medicine, 47) ranked in the top 50.

BACKGROUND

Subject Rankings

The Academic Ranking of World Universities (ARWU) by Subject is an annual ranking of the world's top universities in 54 subject areas. The top 50 scoring universities are ranked individually, whereas institutions ranked above 50 are included into groups.

ARWU uses five indicators to rank each university's quality of education:

- **Publications**: The number of papers authored in a subject area.
- **Citation Impact**: The ratio of citation papers published to average citations in the same subject area.
- **International Collaboration**: The number of publications that have authors in two different countries.
- **Top Publications**: The number of publications in top rated journals in the subject area.
- **Awards**: The number of staff who have Nobel or Field Prize awards in the subject area.

The weighting of each indicator varies based on each subject area.

CURRENT STATUS

On July 19, 2022, ARWU released its annual Subject Rankings for the top 500 institutions in each subject area for 2022.

In total, McMaster was ranked in 35 out of ARWU's 54 subject areas. Overall, McMaster improved its total rank in 6 of the subject areas in which the University was ranked (please refer to Appendix A).

In 2022, McMaster had 6 subjects within the top 100, equaling its total from 2021. One new subject area entered the top 100 for McMaster in 2022 (Library & Information Science), while Pharmacy & Pharmaceutical Science (101-150) fell out of the top 100. McMaster had one subject ranked within the top 50 internationally: Clinical Medicine (47). Among Canadian peers, McMaster had 7 subjects that ranked within the top 5: Civil Engineering, Water Resources, Metallurgical Engineering, Human Biological Sciences, Clinical Medicine, Public Health, and Library & Information Science.

Table 1 shows the subject areas where the University ranked among the top 100 globally in 2022. McMaster's highest ranked subject areas were Clinical Medicine, Civil Engineering and Public Health, which all ranked within the top 75 globally. Clinical medicine saw its rank fall by 5 positions from 2021 to 47th overall. Additionally, Civil Engineering fell out of the top 50 worldwide and is now ranked within the 51-75th category.

Table 1: McMaster University, Top 100 Ranked Subjects, 2021 & 2022

	2021		2022		Δ	
	Rank	Score	Rank	Score	Rank	Score
Clinical Medicine	42	179.9	47	178.4	-5	-1.5
Civil Engineering	40	177.2	51-75	N/S	Decrease	N/S
Public Health	76-100	N/S	51-75	N/S	Increase	N/S
Metallurgical Engineering	51-75	N/S	76-100	N/S	Decrease	N/S
Transportation Science & Technology	51-75	N/S	76-100	N/S	Decrease	N/S
Library & Information Science	N/R	N/R	76-100	N/S	Increase	N/S

N/R = Not Ranked; N/C = No Change; N/S = No Score Available; Increase = Climb in Rank; Decrease = Fall in Rank

METHODOLOGY

Unlike QS and Times Higher Education, ARWU does not ask institutions to submit data to them. All publication data is taken from Web of Science and InCites's database for citations. Nobel Prizes and Field Medal recipients are taken directly from each of the award's respective websites.

Due to the large number of subject areas represented in the ARWU Subject Rankings (54), ARWU does not simply apply the same weight to each of the ranking indicators for all subject areas. Instead, each of the five ranking indicators are weighted appropriately to correspond with the norm of that subject area. Each ranking indicator is then given a score out of 100 that is normalized to the top performing institution. The total score for an institution is the sum of an institution's five ranking indicators for that subject area. Thus, the institution with the largest sum is the top ranked in that subject area. ARWU only ranks and displays the total score for the top 50 ranked universities in each subject area. Institutions ranked above 50 are not given a total score and are categorized into the following groups: 51-75, 76-100, 101-150, 151-200, 201-300, 301-400 and 401-500.

Appendix A: McMaster University Ranked Subjects, 2021 & 2022 ARWU by Subject

		2021		2022			Δ	
		Subject Rank	Weighted Score	Rank in Canada	Subject Rank	Weighted Score	Subject Rank	Weighted Score
Natural Sciences	Mathematics	201-300	N/S	7	201-300	N/S	N/C	N/S
	Physics	201-300	N/S	6	201-300	N/S	N/C	N/S
	Chemistry	301-400	N/S	9	301-400	N/S	N/C	N/S
	Earth Sciences	401-500	N/S	23	401-500	N/S	N/C	N/S
	Geography	201-300	N/S	14	201-300	N/S	N/C	N/S
	Ecology	301-400	N/S	18	301-400	N/S	N/C	N/S
	Oceanography	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Atmospheric Science	301-400	N/S	10	201-300	N/S	Increase	N/S
Engineering & Technology	Mechanical Engineering	201-300	N/S	7	201-300	N/S	N/C	N/S
	Electrical & Electronic Engineering	301-400	N/S	21	301-400	N/S	N/C	N/S
	Automation & Control	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Telecommunication Engineering	151-200	N/S	13	151-200	N/S	N/C	N/S
	Instruments Science & Technology	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Biomedical Engineering	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Computer Science & Engineering	101-150	N/S	13	201-300	N/S	Decrease	N/S
	Civil Engineering	40	177.2	4	51-75	N/S	Decrease	N/S
	Chemical Engineering	301-400	N/S	13	301-400	N/S	N/C	N/S
	Materials Science & Engineering	301-400	N/S	9	301-400	N/S	N/C	N/S
	Nanoscience & Nanotechnology	301-400	N/S	8	301-400	N/S	N/C	N/S
	Energy Science & Engineering	301-400	N/S	12	301-400	N/S	N/C	N/S
	Environmental Science & Engineering	301-400	N/S	18	401-500	N/S	Decrease	N/S
	Water Resources	101-150	N/S	4	101-150	N/S	N/C	N/S
	Food Science & Technology	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Biotechnology	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Aerospace Engineering	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Marine/Ocean Engineering	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Transportation Science & Technology	51-75	N/S	7	76-100	N/S	Decrease	N/S
	Remote Sensing	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Mining & Mineral Engineering	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Metallurgical Engineering	51-75	N/S	2	76-100	N/S	Decrease	N/S
Life Science	Biological Sciences	201-300	N/S	10	201-300	N/S	N/C	N/S
	Human Biological Sciences	101-150	N/S	4	101-150	N/S	N/C	N/S
	Agricultural Sciences	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Veterinary Sciences	N/R	N/R	N/R	N/R	N/R	N/R	N/R

N/R = Not Ranked; N/C = No Change; N/S = No Score Available; Increase = Climb in Rank; Decrease = Fall in Rank

Appendix A: McMaster University Ranked Subjects, 2021 & 2022 ARWU by Subject

		2021		2022			Δ	
		Subject Rank	Weighted Score	Rank in Canada	Subject Rank	Weighted Score	Subject Rank	Weighted Score
Medical Sciences	Clinical Medicine	42	179.9	2	47	178.4	Decrease	-1.5
	Public Health	76-100	N/S	5	51-75	N/S	Increase	N/S
	Dentistry & Oral Science	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Nursing	101-150	N/S	6	101-150	N/S	N/C	N/S
	Medical Technology	201-300	N/S	9	151-200	N/S	Increase	N/S
	Pharmacy & Pharmaceutical Sciences	76-100	N/S	7	101-150	N/S	Decrease	N/S
Social Sciences & Management	Economics	151-200	N/S	12	201-300	N/S	Decrease	N/S
	Statistics	101-150	N/S	8	151-200	N/S	Decrease	N/S
	Law	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Political Sciences	301-400	N/S	17	301-400	N/S	N/C	N/S
	Sociology	151-200	N/S	N/R	N/R	N/R	Decrease	N/S
	Education	151-200	N/S	9	151-200	N/S	N/C	N/S
	Communication	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Psychology	201-300	N/S	16	201-300	N/S	N/C	N/S
	Business Administration	201-300	N/S	10	151-200	N/S	Increase	N/S
	Finance	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Management	201-300	N/S	9	151-200	N/S	Increase	N/S
	Public Administration	N/R	N/R	N/R	N/R	N/R	N/R	N/R
	Hospitality & Tourism Management	201-300	N/S	N/R	N/R	N/R	Decrease	N/S
	Library & Information Science	N/R	N/R	5	76-100	N/S	Increase	N/S

N/R = Not Ranked; N/C = No Change; N/S = No Score Available; Increase = Climb in Rank; Decrease = Fall in Rank